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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 10/550,616 | 03/19/2007 | Walter Rajner | 039185-4 | 4656 |
| 25570 | 7590 | 02/04/2009 | EXAMINER | |
| ROBERTS MLOTKOWSKI SAFRAN & COLE, P.C. Intellectual Property Department P.O. Box 10064 MCLEAN, VA 22102-8064 | | | MCGUTHRY BANKS, TIMA MICHELE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1793 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 02/04/2009 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/550,616 | RAJNER ET AL. | |
| | Examiner | Art Unit | |
| | TIMA M. MCGUTHRY-BANKS | 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 December 2008.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-13 and 16-19 is/are pending in the application.
 - 4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5,7-9 and 16-19 is/are rejected.
- 7) Claim(s) 6,10 and 11 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/19/07</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Status of Claims

Claims 1-13 are currently amended, Claims 14 and 15 are cancelled, and Claims 16-19 are new.

Election/Restrictions

Claims 12 and 13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected apparatus, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12 December 2008.

Claim Objections

Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim is directed to the same limitation as parent Claim 2.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 and 19 state the limitation “open on both sides.” It is not clear which sides are being claimed, since rectangular structures, such as those exemplified in the figures, have six sides.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 19954755 A1 (English abstract and machine translation).

DE ‘755 anticipates the claimed invention. DE ‘755 teaches a semi-finished metal product is foamed to produce a lightweight material (title). The product is foamed in a chamber by heating with external radiation (abstract). The metal includes Al powder (machine translation, page 2, paragraph 5). The specification exemplifies Al as one of the metals that meet the criteria with a MP >200 °C [0020]. The casting mold is made of quartz glass (paragraph 2), which is exemplified as a material that meets the CTE requirement as in the specification in [0021]. Regarding Claim 4, the separating agent is taught by the protection layer (page 1, paragraph 6). Regarding Claim 9, the wall has a thickness of 15 mm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 3, 5, 8 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE '755.

DE '755 discloses the invention substantially as claimed. However, DE '755 does not specifically teach that the mold is at least partially diathermic as in Claims 2 and 18, cooling off

the mold in a controlled manner after heating as in Claim 3, foaming under a controlled gas atmosphere at a pressure up to a 5 bar as in Claim 5, monitoring as in Claim 8 or the specific ranges as in Claims 16 and 17.

Regarding Claims 2 and 18, applicant defines diathermic as a material that is permeable for heat radiation [0023]. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the quartz glass taught by DE ‘755 would read on a diathermic material, since DE ‘755 teaches using radiation to heat furnace. Regarding Claim 3, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the foam would be cooled after being formed, since a foamed metal product is formed. Regarding Claim 5, it would have been obvious to one of ordinary skill in the art at the time the invention was made that DE ‘755 reads on the claimed pressure, since DE ‘755 reads on forming under atmospheric pressure or 1 bar. Regarding Claim 8, DE ‘755 teaches guaranteeing a high transmittance (page 2, paragraph 12). Additionally, the radiation is targeted (page 1, paragraph 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the radiation emitter in DE ‘755 would be monitored, since DE ‘755 teaches targeting the energy. Regarding Claim 16, DE ‘755 teaches a thickness of 5-25 mm (page 1, paragraph 9), which overlaps the claimed range. It would have been obvious to one of ordinary skill in the art at the time the invention was made that DE ‘755 reads on the claimed range, since in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists. See MPEP § 2144.05. Regarding Claim 17, it would have been obvious to one of ordinary skill in the art at the time the invention was made that DE ‘755 is obvious over the range of 2-4 mm, since a *prima facie* case of obviousness exists where the

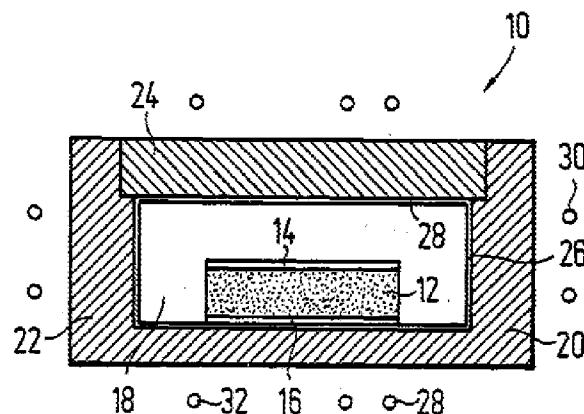
claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See MPEP § 2144.05 I.

Allowable Subject Matter

Claims 6, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7 and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:
Regarding Claims 6, 7, and 19, the DE '755 does not disclose or suggest that the casting mold is open at least at one side. Regarding Claims 10 and 11, DE '755 does not disclose or suggest that at least one wall of the casting mold is supported by supports. The casting apparatus for DE '755 is shown below:



Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMA M. MCGUTHRY-BANKS whose telephone number is (571)272-2744. The examiner can normally be reached on M-F 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit
1793

/T. M. M./
Examiner, Art Unit 1793
3 February 2009